WHAT IS CLAIMED IS:

1. A polishing member comprising:

photocatalyst particles that exhibit photocatalysis on light irradiation; and

a support material that supports the photocatalyst particles.

2. The member according to claim 1, wherein the photocatalyst particles contain at least one compound selected from the group consisting of titanium oxide, tin oxide, niobium oxide, iron oxide, cadmium selenide and cadmium sulfide.

3. The member according to claim 1, wherein the photocatalyst particles contain titanium, oxygen and at least one of nitrogen and sulfur.

4. The member according to claim 3, wherein a concentration of nitrogen and/or sulfur in the photocatalyst particles falls within a range of 0.05 atomic % to 10 atomic %.

5. The member according to claim 1, wherein each of the photocatalyst particles supports at least one metal element selected from the group consisting of platinum, nickel, copper, silver, gold and niobium on a surface thereof.

6. The member according to claim 5, wherein an area ratio of surfaces of the photocatalyst particles that are covered with the metal element with respect to whole surfaces of the photocatalyst particles falls

within a range of 5% to 90%.

7. The member according to claim 1, further comprising inorganic particles that are supported by the support material together with the photocatalyst particles and contain at least one material selected from the group consisting of alumina, silica, ceria, carbon and manganese dioxide.

8. The member according to claim 1, wherein particle diameters of the photocatalyst particles distribute within a range of 5 nm to 100 nm.

9. The member according to claim 1, wherein a concentration of the photocatalyst particles in the member falls within a range of 10% by volume to 90% by volume.

10. A method of manufacturing a semiconductor device, comprising:

polishing a surface of a workpiece that is to be used as at least a portion of the semiconductor device with a polishing member with a fluid interposed between the polishing member and the surface of the workpiece while performing light irradiation onto the polishing member, the polishing member comprising photocatalyst particles that exhibit photocatalysis on the light irradiation and a support material that supports the photocatalyst particles.

11. The method according to claim 10, wherein the fluid consists essentially of water or a mixture of

water and pH adjuster.

12. The method according to claim 10, wherein the light irradiation includes irradiating the polishing member with ultraviolet light and/or visible light.

13. The method according to claim 10, wherein the photocatalyst particles contain at least one compound selected from the group consisting of titanium oxide, tin oxide, niobium oxide, iron oxide, cadmium selenide and cadmium sulfide.

14. The method according to claim 10, wherein the photocatalyst particles contain titanium, oxygen and at least one element of nitrogen and sulfur.

15. The method according to claim 14, wherein a concentration of nitrogen and/or sulfur in the photocatalyst particles falls within a range of 0.05 atomic % to 10 atomic %.

16. The method according to claim 10, wherein each of the photocatalyst particles supports at least one metal element selected from the group consisting of platinum, nickel, copper, silver, gold and niobium on a surface thereof.

17. The method according to claim 16, wherein an area ratio of surfaces of the photocatalyst particles that are covered with the metal element with respect to whole surfaces of the photocatalyst particles falls within a range of 5% to 90%.

18. The method according to claim 10, wherein the

polishing member further comprises inorganic particles that are supported by the support material together with the photocatalyst particles and contain at least one material selected from the group consisting of alumina, silica, ceria, carbon and manganese dioxide.

19. The method according to claim 10, wherein particle diameters of the photocatalyst particles distribute within a range of 5 nm to 100 nm.

20. The method according to claim 10, wherein a concentration of the photocatalyst particles in the member falls within a range of 10% by volume to 90% by volume.